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May-June

Conservation

Pledge

I give my
pledge as an American
to save and faithfully to
defend from waste the
natural resources of
my country—its soil
and minerals, its
forests, waters
and wildlife

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A typical Louisiana scene in May and June is that of bass fishermen holding highly-prized strings of fish. These are two of the most attractive freshwater fishing months although freshwater fishing is good all year around. Budding, moss-draped trees in the background show that winter has lost its punch and that the balmy, pleasant days are at hand. Bass are taken all over Louisiana and can properly be considered the most appealing freshwater game fish for sportsmen.

(Photo By Paul Kalman)

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LOUISIANA WILD LIFE AND FISHERIES COMMISSION

JIMMIE H. DAVIS
Governor



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Nelson Summerell, left, and the author, the Commission's "duck counters", discuss survey routes prior to making an inventory.

TWICE EACH MONTH throughout the past winter the children at the Johnson Bayou school noted a small plane which approached, dropped quickly to a low level, and disappeared across the marsh at that same tree-top altitude. They took little note of the event, nor should they have. It has been occurring at these regular bi-monthly intervals, from fall until spring, for more than a decade.

"That's just those duck counters", might be the only comment warranted by the plane's passing.

Inside the plane an observer pushes the button of a microphone and talks into a recorder: "Transect one Southwest Louisiana. October 15, 1963. Temperature is 72 degrees, no wind, weather clear with visibility unlimited, and now counting . . . mallard 10 . . . pintail 6 . . . gadwall 20 . . . blue-wing 50 . . ."

The "duck counting" for that particular waterfowl inventory of the Louisiana Wild Life and Fisheries Commission had begun.

One of the most valuable facts which a wildlife manager or administrator can have is knowledge about the population status of the species in question. Since the earliest stages of game management, therefore, efforts have been made to inventory wildlife.

The total population of a species, or even the population trend, can be relatively unimportant when dealing with certain game. In the case of deer, for instance, browse studies can tell the biologist whether or not the carrying capacity

Counting DUCKS

Clark Hoffpauir



The Commission's inventory plane on a census flight. Louisiana's vast waterfowl habitat would be impossible to check properly without aircraft.

of that range has been reached or exceeded. He can then liberalize or restrict hunter harvest to bring the herd into balance with the habitat.

This is not true of waterfowl.

There are examples of overutilization of an area by waterfowl, but the mobility of ducks and geese precludes using the above method of determining population-habitat balance. An actual inventory of waterfowl populations and/or trends, therefore, is most desirable.

The first tallying of waterfowl was done by the old Bureau of Biological Survey, predecessor of the present U.S. Fish and Wildlife Service, in the early 1930's. It consisted simply of a card to key people in the United States. It was merely an opinion poll, since it asked: "Do you think there are more or fewer ducks this year than there were last year?"

Later the Bureau began making actual ground counts using its own personnel, and about 1938 some of the states began making their own estimates. It was 11 years later, however, the fall of 1949, when Louisiana began "counting ducks".

The department soon recognized the importance of this census to waterfowl hunters, and assigned it high priority. Continuous efforts were made to improve it and, despite being started later than were some in other parts of the nation, the Louisiana inventory now conducted by the Wild Life and Fisheries Commission is currently one of the most reliable in existence.

Counting waterfowl from the ground is not

very satisfactory. Whether the tally is made from water's edge or from a boat the disadvantages are many, and they are obvious. Only the fringe of concentrations can be observed. Many ducks hide in vegetation where they can't be seen from ground level. Ducks and geese move away from observers on foot or afloat and may be counted more than once. Many waterfowl areas cannot be approached either by foot or by boat.

It is immediately apparent that ground checking of five million acres of marsh, two or three million acres of rice fields and pastures, and several hundred lakes and rivers is impossible without a completely impractical army of observers.

Until the availability of reliable airplanes, however, the ground count was the next best thing. It is still needed for certain phases of the breedings area survey, such as for brood counts and nesting counts, but it is rarely applicable to inventory of migrating or wintering waterfowl.

For reasons ranging from economics to indifference, some states and some organizations continue to use ground surveys. All Louisiana inventories are made from the air, and have been for more than a decade.

A "count" of millions of waterfowl, of course, is not the precise count of a rancher tallying his cattle. It is a highly educated estimate by experienced personnel using the best techniques.

For purposes of waterfowl inventory Louisiana is divided into five areas: Southwest, Southeast, Northeast, Northwest, and Central. For the first two areas a sampling technique of census is used, except that in the Southwest a total count is made when ducks become concentrated. For the other three a "total count" of waterfowl is made on all lakes, streams, and swamps known to have ducks or geese on them.

The sampling technique used in the Southwest and Southeast is called the transect method or strip count. In it the observers fly precise east-west or north-south lines which are spaced so that they are representative of the terrain. These strips are marked on a map and remain exactly the same from year to year.

The flight along each transect is made at an altitude of 75 feet, with the plane slowed to a speed of 90 to 100 miles an hour. The two observers—one is the pilot—count the waterfowl on their respective sides of the flight path, to a distance of 220 yards from the line. This gives a strip tally 440 yards in width, or $\frac{1}{4}$ of a mile.

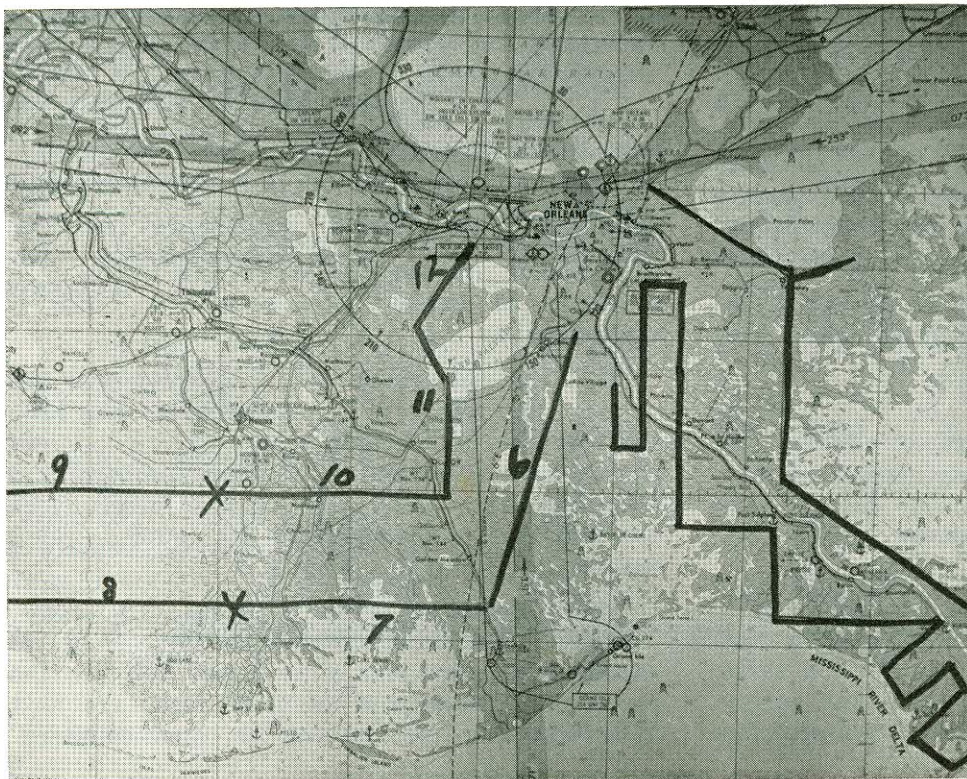
The use of an automatic recording device greatly facilitates the actual counting. In being able to talk the tremendous number of figures into a mike rather than having to jot them down on paper, the observers are able to devote full attention to the waterfowl.

The total figures for each transect are multiplied by an expansion factor which represents the percent of the total area it covers. This is done by species, with the results added to get an overall total.

There is one exception to the use of the transect method in the marsh-ricefield country, the Southwest and Southeast, and that is the case of refuges. On these a total count is made rather than a sampling.

The reason for this exception is that huge concentrations of ducks and geese are attracted to these sanctuaries. To expand a transect through these concentrations as representative of the entire surrounding countryside would give an abnormally high, inaccurate total.

This same bias would also be true where a transect crosses a tremendous concentration of ducks, so the total count is used when this



Transects are laid out on a map and remain the same from year to year.

occurs. Again, this is for the purpose of avoiding an inaccurately high total.

The same type of total count used on refuges in south Louisiana is used on all waterfowl concentrations areas of the Central, Northwest, and Northeast areas. Duck and goose habitat in these three is relatively sparse and well delineated, which makes this approach to inventory practical.

The ability of a good observer to "eyeball" a flock of ducks and quickly arrive at a reasonably accurate figure is amazing, but it is easily explained by two factors: training and experience. Stability of personnel increases the reliability of waterfowl inventories, so the value of those made in Louisiana are increased by the fact that fewer than six men have been involved since the counts began 15 years ago.

Nelson Summerell and Clark Hoffpauir are the two Louisiana duck counters at this time. Nelson, who lives in Ferriday, serves as pilot. Clark, who lives on Rockefeller Refuge in Cameron parish, is the Commission's waterfowl biologist.

Although several types of aircraft have been used since aerial inventory began in Louisiana in 1951, the plane now used for most of the work is a single engine plane with retractable landing gear. The high wing characteristic of this craft gives good visibility, and the plane is fast enough to minimize time lost when "dead heading" between transects. The retractable landing gear affords a measure of safety in the event of an emergency landing in marsh or water.

For checking the huge concentrations of scaup which frequently gather far out in the Gulf in late winter, Commission inventory personnel usually turn from the single-engine aircraft to a twin-engine amphibious plane.

Louisiana's waterfowl habitat is vast, and any single duck and goose survey of it is a substantial task. Some 26 hours of actual flying time are required for the average statewide census. Considering the time lost on unproductive runs between transects this is about 3½ days of flying.

When each flight session is over the mass of information on the recordings must be transcribed. The expansion factor for each transect must be applied by species. The totals for each of the state's five sections are tabulated, and finally that for the entire state.

Weather is always a factor that must be considered in making these inventories, both for the sake of visibility and for safety. Hours of low-level flying involve an element of danger, and there have been forced landings during the census.

A single census of Louisiana, therefore, is a substantial undertaking. Magnify that by the problems involved in conducting two of these each month from early fall through late spring since 1951, however, and the accomplishment becomes infinitely greater.



The work isn't over when the plane lands. All of the data on the records must be transcribed—by species and by transects.

Some waterfowl areas of Louisiana are surveyed more frequently than twice a month. The Northeast and Northwest sections are usually checked each week, and Catahoula Lake—known to be the key hotspot for ducks north of the marshes—is frequently censused twice a week.

The Louisiana Wild Life and Fisheries Commission believes that the results are worth the effort!

From these years of effort the Commission has accumulated a wealth of information concerning the waterfowl which migrate into and through the state and which winter in Louisiana—species composition, distribution, arrival dates, major flight peaks, and data on population numbers and trends. It is probable that no other state has such a backlog of detailed information concerning its waterfowl.

Chief beneficiary of this work has been the hunter. The results of the inventories have been used by the Commission in fixing season dates for maximum advantage of most gunners, and they have been used liberally and forcefully in pressing for sound migratory bird hunting regulations.

The Commission plans to continue the waterfowl surveys, since the cost-benefit ratio is so obviously on the plus side. When you see the small plane buzz your favorite duck lake next fall, therefore, just say that the "duck counters" are back at it. ✱